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Syracuse University Guide for Developing an Assessment and Action Plan: Academic Programs

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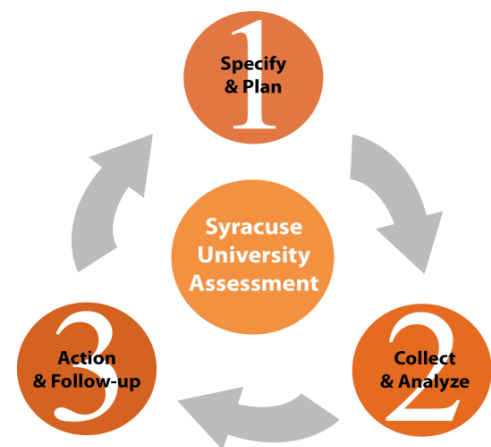
Syracuse University Assessment

Syracuse University is accountable to a number of external stakeholders including New York State, various specialized accreditors, and the Middle States Commission on Higher Education (MSCHE). Middle States accreditation operates on an eight-year self-study cycle with a periodic review report submitted in year four. In recent years, the accreditation landscape has changed to more centrally focus on the outcomes of student learning experiences and institutional effectiveness.

To demonstrate our commitment to not only meet standards set by accrediting bodies, but to provide our students with an outstanding educational experience in and out of the classroom, Syracuse University continues to enhance our culture of assessment and continual improvement.

Assessment is integral to maintaining quality and effectiveness at any institution of higher education. It relies on the contributions of all academic, co-curricular, and functional areas campus-wide in meeting Syracuse University's mission and goals. Within the culture of assessment, the mission and goals of each academic, co-curricular, and functional program/unit should align with the overall mission of the University and each program and unit has developed an assessment and action plan.

An assessment and action plan can be viewed as a process for continual improvement of the learning environment, products, processes, and services, as well as a tool for managing resources. It should be meaningful to its stakeholders and the results used to inform decision-making. From the results of assessment, each area determines what actions could be taken to improve the student experience, take those actions, and then measure whether the actions were effective.



Assessment Working Team

Institutional Effectiveness and Assessment (IEA) has put together an Assessment Working Team (AWT) whose members are available to consult with and provide support and resources to academic programs, co-curricular programs/units, and functional areas as they develop and implement assessment and action plans. If you have assessment-related questions, or are interested in a consultation, department/unit meeting or workshop for your area, please contact the AWT at assessment@syr.edu.

Academic Programs

An academic degree program results in a degree or certificate of advanced study. Academic programs are typically housed within academic departments or within a school or college; however, there are also Academic programs that are interdisciplinary.

For example, the Mathematics department offers the following undergraduate Academic programs: B.S. in Mathematics, B.A. in Mathematics, B.S. in Applied Mathematics, B.A. in Applied Mathematics, plus minors associated with these programs. The department also offers several graduate Academic programs. Separate Assessment and Action Plans, which include student learning outcomes, will need to be developed for each of these.

Institutionally, all Academic programs, including minors, will need an Assessment and Action Plan. For minors with a parent major, student learning outcomes should be a subset of the major's student learning outcomes.

There may be common outcomes across Academic programs. For example, the B.S. in Mathematics and the B.A. in Mathematics may have outcomes in common; however, they should also have outcomes that differentiate them from one another.

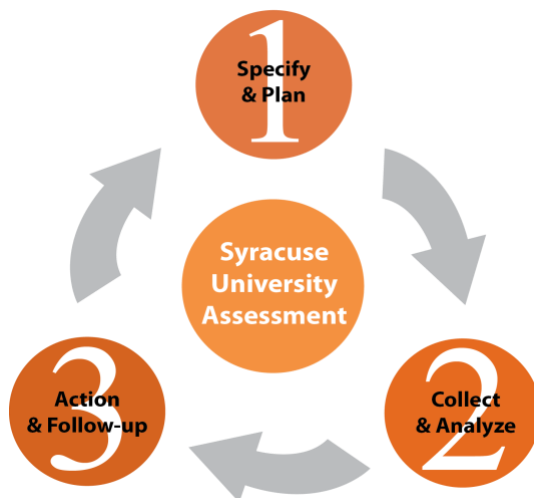
Introduction to Assessment and Action Plans

This guide provides information on developing an Assessment and Action Plan for Academic programs. The process for conducting assessment is organized into three phases:

Phase 1—Specify and Plan: Develop student learning outcomes to describe what students will know or be able to do at the end of the academic program. For each outcome, identify direct and indirect measures that provide evidence of whether the outcome is achieved and define criteria used to determine success.

Phase 2— Collect and Analyze: Collect data for measures specified in Phase 1. Analyze and interpret results.

Phase 3—Action and Follow-up: Indicate actions to be taken and how faculty know the actions made a difference. After actions are implemented, determine and document impact(s).



The appendices at the end of this guide provide various resources that may be useful to you as you develop your Assessment and Action Plan.

Appendix A: Glossary

Appendix B: Learning Outcome Action Verbs

Appendix C: Direct and Indirect Measures Examples



Phase 1—Specify and Plan

The Assessment Working Team has also assembled other resources to support program/unit assessment efforts, which you can find at <http://assessment.syr.edu>

During this first phase, the focus is on identifying:

- Student learning outcomes
- Information that will be examined related to each outcome
- Criteria to determine whether the program achieved the outcome

I. Student Learning Outcomes

Every Academic program should define 5-7 learning outcomes¹ they seek to achieve. These outcomes should focus on what the students are expected to know or be able to do when they successfully complete the academic degree program.

Student Learning Outcomes	
Definition	Student learning outcomes are operational statements describing specific student behaviors that evidence the acquisition of desired knowledge, skills, abilities, capacities, attitudes, or dispositions.
Example	Students will be able to synthesize in-depth information of (subject) in the development of a research proposal.

Student learning outcomes should be written using active verbs that describe what students should be able to do, know, or produce. Outcomes should be specific, measurable, and attainable within the context of the degree program. As a reminder, these outcomes are assessed at the academic degree program level; they are not course level objectives.

For examples of learning outcome action verbs, see **Appendix B**.

II. Measures

For each student learning outcome, identify both **direct and indirect measures** that provide information and evidence of whether the student learning outcome is achieved.

Direct measures should be the primary means of demonstrating that student learning outcomes have been achieved. Direct assessment of student learning outcomes can be examined using embedded course assignments, capstone projects, portfolios, field experiences, and performances. If Academic program use published exams, such as exams for licensure or certification, as a requirement for completion of an academic degree program, the exam results can be used as a direct measure.

Indirect measures operate best as a support to the information gathered through direct measures. Alone, they are not sufficient to demonstrate the achievement of student learning outcomes. Indirect information is often gathered through surveys, interviews, and focus groups. It reflects the opinions and perceptions about a student learning outcome.

¹ 5-7 student learning outcomes is a suggested number. You may identify more if indicated by your program.

Example of Direct and Indirect Measures for the same Student Learning Outcome

Student Learning Outcome	Direct Measure	Indirect Measure
Students will be able to synthesize in-depth information of (subject) in the development of a research proposal.	The research proposal, written as a capstone experience, is assessed against a faculty-developed rubric. ²	Final course grades from the Crafting Research Proposals course.

Why are final course grades indirect measures?

Although a course grade provides information regarding progress toward the student learning outcome, a grade includes aspects that are not necessarily related to student learning. One example is attendance. While attendance may impact student learning, it is not directly related to what the student learned. Additionally, a final course grade often reflects progress toward many learning outcomes and is a compilation of the student's progress toward all of these outcomes. Singling out a research proposal with a rubric that details components and degrees of competency would create a direct measure of student learning.

There is no specific number of measures that should be included for each outcome; however, plans should include as many **direct measures** as possible. A suggested ratio of direct to indirect measures is 2:1. For examples of direct and indirect measures, see **Appendix C**.

III. Criteria for Success

For each **Measure**, identify a criterion that indicates that students have acquired the desired learning outcome. The criteria should be realistic and do not need to indicate perfection. Keep in mind that criteria are levels of success that you are striving to achieve.

Student Learning Outcome	Measures	Criteria
Students will be able to synthesize in-depth information of (subject) in the development of a research proposal	<ul style="list-style-type: none"> Assessment of research proposal for Crafting Research Proposals course 	<ul style="list-style-type: none"> 90% of the students achieve ratings of 4 or better, using a rubric with a scale of 1–5.
	<ul style="list-style-type: none"> Course grades from the Crafting Research Proposals course 	<ul style="list-style-type: none"> 100% of students in the major will complete the course with a passing grade of C or better.

To determine meaningful and realistic criteria, look at past information about student work, alumni surveys, or employer surveys and feedback. The information you collect, while not perfect, should assist you in selecting meaningful criteria.

² For more information on developing rubrics, visit the IEA website at assessment.syr.edu.



Phase 2—Collect and Analyze

The student learning outcomes from Phase 1 should not be simultaneously investigated. Instead, outcomes should be evaluated over a number of yearlong assessment cycles. During each assessment cycle, the faculty involved in the academic program should select and pursue specific outcomes. Phase 2 should then be completed for those outcomes.

Phase 2 focuses on collecting the evidence specified under measures and interpreting the results. Well-defined outcomes, measures, and criteria make it easier to collect the evidence identified in Phase 1 and provide meaningful analysis.

To begin this phase:

- Determine the plan for collecting the evidence
- Specify the person(s) responsible for collecting the evidence
- Specify the person(s) responsible for analyzing the evidence

I. Collect and Record Results

Collect and record the results of assessment activities. Writing the results in detail increases the ability to interpret the information. For criteria, include exact numbers and percentages. This will increase your ability to interpret the information. For measures and criteria, include when the results were collected.

II. Analyze and Interpret Results

When analyzing and interpreting results, it is not sufficient to simply say your students are doing well. Determine what the results indicate about the academic program. The process of assessment is grounded in the belief that understanding the implications of the results and a proper interpretation requires personnel who are closely tied to the academic program. The interpretation should be as specific as possible, and be performed by a majority, if not all, faculty involved in the program.

When reviewing data consider the following questions:

- What are the strengths and weaknesses observed across the selected direct and indirect assessment measures for the outcomes being assessed?
- What processes are operating as expected?
- What can be improved?

This discussion will lead to phase 3 of the assessment process where actions may be identified.

Phase 1 and Phase 2 for an Example Academic Degree Program

School/College: College of Agriculture

Degree Awarded: B.S. in Agriculture Sciences

Degree Program Title: Agricultural Sciences

PHASE 1			PHASE 2	
Learning Outcomes <small>How are students expected to change as a result of the program?</small>	Measures <small>What direct and indirect assessment measures will be used?</small>	Criteria <small>How will the program's competency be determined?</small>	Results <small>What was learned in the assessment process?</small>	Interpretation <small>What will the results mean to the program?</small>
<p>Students will demonstrate knowledge in key soil science concepts.</p>	<ul style="list-style-type: none"> • Direct: AGR 490 Capstone project: written component demonstrating student knowledge of key soil science concepts • Direct: Senior thesis project • Indirect: Students' Grade 	<ul style="list-style-type: none"> • AGR 490: Using a rubric with a scale of 1-5, 90% of the students achieve ratings of 4 or higher on items related to this outcome. • Senior thesis project: Using a rubric with a scale of 1-5, 90% of students achieve ratings of 4 or higher on items related to this outcome. • 90 % of the Students' got C and above grade. 	<ul style="list-style-type: none"> • Ratings from Capstone Project: 85% students met the standard. • Ratings from Senior Thesis: 80% students met the standard. • Those who failed to meet the standard were most often deficient in soil aeration concepts. • Student grades were cross tabulated with the above direct measures. 	<p>Soil aeration concepts may be inadequately covered in prerequisite course AGR 230. A review of the course syllabus showed that aeration was being addressed early in the course; faculty determined that introduction of aeration later in the course might lead to better retention of these concepts.</p> <p>Cross tabulation of Students' grades with the one or more direct measure has revealed that even students with higher course grades have not mastered soil aeration concepts as per the ratings from Capstone Project and Senior Thesis. Faculty have decided to tie grading to more explicit learning goals.</p>



Phase 3—Action and Follow-up

Based on the results and interpretation in Phase 3, the academic program can now determine whether or not their student learning outcomes are being achieved. In Phase 3, the faculty can decide what concepts or skills are in need of reinforcement and determine how the curriculum should be modified.

I. Action

Specify what action will be taken to improve learning. Based on the interpretation of results, the following questions should be considered:

- What actions should the academic program unit take, if any?
- How should any identified changes be made?

The assessment process should foster action. Focus on one or two action items each year and decide who will be responsible for follow-up. As you implement your action plans, keep written records of activities related to the action as documentation of the process. Certain action items may be long term and results are reported in subsequent years.

II. Follow-Up

Follow-up refers to the plan for determining whether or not the action steps successfully improved the academic degree program. If actions have been taken and the impact of those actions have been studied, those findings can be documented here.

Phase 3 for an Example Academic Degree Program

PHASE 3	
Action	Follow-Up
Based on the results and interpretation from Phase 2, what action will be taken?	What has been the impact of the action taken?
The sequence of topics in AGRI 230 will be revised, putting aeration later in the course. In addition, faculty will review how key aeration concepts are reinforced later in the curriculum.	Increase in student achievement rating to criteria: 90% of the students achieve ratings of good or better in all dimensions.

III. Improving Unit Assessment Processes

After completing Phase 3, faculty should be provided an opportunity to recommend improvements to the program or unit's assessment processes.

Possible recommendations could include:

- Identifying the need for more, or different, measures for specific outcomes.
- Determining the need to streamline the process of collecting information.
- Identifying additional faculty who should be involved in assessment activities.

These recommendations should be included at the end of the Assessment and Action Plan.

Appendix A

Glossary

Academic Program—Title of a given program within an academic department, usually resulting in a degree (e.g., Turkish, Health and Wellness Minor, Bachelor of Architecture, Master's in Media Studies, Certificate of Advanced Studies in Instructional Design Foundations, Doctorate in Geography, etc.).

Accountability—Using the results of assessment to demonstrate the quality of a program or university to concerned audiences. (Suskie, 2009)

Action Research—Purpose is to inform and improve one's own practice rather than make broad generalizations. Assessment is a form of action research. (Suskie, 2009)

Assessment (of Institutional Effectiveness)—Institutional assessments are essential to identifying gaps in performance of organizations that may be used to inform plans for improvements. Efforts to identify strengths and weaknesses within the organization of the institution via measures of performance will inform improvements to efficiency, effectiveness, and sustainability of organizations.

Assessment (of Learning)—The ongoing process of: (1) establishing clear, measurable expected outcomes of student learning, (2) ensuring that students have sufficient opportunities to achieve those outcomes, (3) systematically gathering, analyzing, and interpreting evidence to determine how well learning matches our expectations, and (4) using the resulting information to understand and improve student learning. (Suskie, 2009)

Criteria (as a standard for assessment)—The values assigned to different levels of qualities, skills, and attributes found through the assessment, or how the work is valued and judged.

Curriculum Map—Shows the degree to which a program's student learning outcomes are addressed in the courses/experiences that make up the curriculum. The rating scale represents a continuum from the beginning of the curriculum to the end of the student's experience in the academic program.

Degree—Degree awarded to student of a given academic department (e.g., BS, BA, MS, MA, CAS, PhD).

Direct Measure of Assessment—Methods that involve direct display of knowledge and skills (test results, written assignments, presentations, classroom assignments) resulting from learning experience in the class/program. (Palomba & Banta, 1999)

Evaluation—The use of assessment findings (evidence/data) to judge program effectiveness; used as a basis for making decisions about program changes or improvement. (Allen, Noel, Rienzi & McMillin, 2002)

Formative Assessment—Assessment conducted during the life of a program (or performance) with the purpose of providing feedback that can be used to modify, shape, and improve the program (or performance). (Banta & Palomba, 2015)

Goals—The general aims or purposes of a unit that are consistent with its mission. Goals should be broadly stated, meaningful, achievable, and provide a framework for identifying outcomes.

Grading—The process by which a teacher assesses student learning through classroom tests, assignments, observations, interactions, performances and other forms of work; the context in which teachers establish that process; and the dialogue that surrounds grades and defines their meaning to various audiences. (Walvoord, 1998)

Indirect Measure of Assessment—Methods that involve perceptions of learning or improvement rather than actual demonstrations of outcome achievement (alumni surveys, employer surveys, exit interviews)

Institutional Effectiveness—The degree to which an institution successfully achieves its mission and goals and is in compliance with accreditation standards. The effectiveness of an institution rests upon the contribution that each of the institution’s programs and services makes toward achieving the goals of the institution as a whole.³

Learning Objectives—Statements that specify what learners will comprehend or be able to demonstrate as a result of a study activity or course or program. Learning objectives help instructors convey more distinctly to students what is expected of them. Objectives also help instructors develop effective strategies for evaluating student work and study. Objectives are usually stated, using action verbs, as knowledge, skills, and/or attitudes. They should be demonstrable and measurable. (University Senate Committee on Curricula)

Objectives—Statements of what a functional unit strives to achieve. They are specific, measurable, achievable, results-oriented, and time bound.

Operational Objectives—Statements associated with a unit goal indicating what the goal is intended to achieve. Objectives should be written using active verbs that describe what unit will do to ensure the goal is attainable.

Program Review—Comprehensive evaluation of an academic degree program that is designed both to foster improvement and demonstrate accountability. (Suskie, 2009)

Rubric—A scoring tool that lays out the specific expectations for an assignment or activity. (Stevens & Levi, 2013)

Standard—The minimal level elements, characteristics, and qualities that must be followed. In the context of curriculum, standards are the minimal level of material within a curriculum that must be taught to students. An accrediting body typically develops standards.

Student Development Outcomes—Statements describing the affective dimensions to be instilled or enhanced; assess affective dimensions or attitudes and values (not cognitive abilities); and consider growth in ethical, spiritual, emotional, and social responsibility dimensions (Bresciani, 2001; Denny, 2009 as cited in Culp & Dungy, 2012). These outcomes may detail how students exhibit an increase in self-discipline, become more respectful of others’ values, involve themselves in community service, engage in reflective spirituality, etc.

Student Learning Outcomes—Statements describing specific student behaviors that evidence the acquisition of desired knowledge, skills, abilities, capacities, attitudes, or dispositions. They should be written using active verbs that describe what students should be able to do, know, or produce over time as a result of participation in the program.

Summative Assessment—Assessment conducted after a program has been in operation for a while, or at its conclusion, to make judgments about its quality or worth compared to previously defined standards for performance.

Target—A measure of how effectively and efficiently a functional unit is operating. A target should include three aspects: a level (e.g., prior year metrics or baseline data), a subject/object (e.g., students, faculty, staff, report, or satisfaction level), and a modifier (e.g., percentage increase, decrease, maintained performance, or timeframe).

³ Lex, A.A. (2014, April). Encouraging and supporting campus wide involvement in improving instructional effectiveness. Middles States Commission on Higher Education, Philadelphia, PA.

Appendix B

Action Verbs

Cognitive Domain

This list of action verbs can be used in the development of program-level outcomes or course-level learning objectives in the **cognitive domain**. It is adapted from Jerrold Kemp's "Shopping List of Verbs" (2014) and based upon Bloom's Taxonomy of Learning. Each column includes (1) category from Bloom's Taxonomy of Learning, (2) definition of the category, and (3) action verbs associated with that category.

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Knowledge of terms, facts, conventions, classifications, etc.	Comprehension of ideas, translations, interpretations, extrapolation.	Use of knowledge, problem solving, etc.	Examination of parts of information.	Fusion of ideas to produce unique plan, structure, pattern, etc.	Forming judgments based on criteria and evidence.
Define Describe Identify Label List Name Recognize Recall Repeat State	Characterize Classify Convert Defend Discuss Distinguish Establish Estimate Explain Express Extend Generalized Illustrate Indicate Infer Locate Paraphrase Predict Recognize Relate Review Rewrite Summarize Translate	Apply Change Choose Compute Demonstrate Discover Dramatize Employ Interpret Manipulate Model Modify Operate Practice Predict Prepare Produce Relate Schedule Show Sketch Solve Use Write	Analyze Appraise Breakdown Calculate Categorize Compare Contrast Criticize Diagram Differentiate Discriminate Distinguish Examine Experiment Identify Illustrate Infer Model Outline Point out Question Relate Select Separate Subdivide Test	Arrange Assemble Collect Combine Comply Compose Construct Create Design Develop Devise Explain Formulate Generate Plan Prepare Rearrange Reconstruct Relate Reorganize Revise Rewrite Set up Synthesize Tell Write	Appraise Argue Assess Choose Compare Conclude Contrast Defend Describe Discriminate Estimate Evaluate Explain Interpret Judge Justify Predict Rate Relate Select Support Value

Affective (Developmental) Domain

This list of action verbs can be used in the development of program-level outcomes or course-level learning objectives in the **affective domain**. It is adapted from Kathy V. Waller's "Writing Instructional Objectives" guide⁴. The "[developmental] affective domain in concerned with changes (growth) in interests, attitudes and values. It is divided into five major classes arranged in hierarchical order based on level of involvement (from receiving, to characterization by a value)" (Waller, n.d., p.4). Each column includes (1) category from Krathwohl's (as cited in Waller, n.d.) affective domain taxonomy (2) definition of the category, and (3) action verbs associated with that category.

Receiving	Responding	Valuing	Organization	Characterization
Attend to Stimuli	React to stimuli	Attach significance to ideas	Build value system	Develop person style
Ask	Agree	Adopt	Anticipate	Act
Acknowledge	Allow	Aid	Collaborate	Administer
Attend (to)	Answer	Care (for)	Confer	Advance
Follow	Ask	Complete	Consider	Advocate
Listen	Assist	Complement	Consult	Aid
Meet	Attempt	Contribute	Coordinate	Challenge
Observe	Choose	Delay	Design	Change
Receive	Communicate	Encourage	Direct	Commit (to)
	Comply	Endorse	Establish	Counsel
	Conform	Enforce	Facilitate	Criticize
	Cooperate	Evaluate	Follow through	Debate
	Demonstrate	Expedite	Investigate	Defend
	Describe	Foster	Judge	Disagree
	Discuss	Guide	Lead	Dispute
	Display	Initiate	Manage	Empathize
	Exhibit	Interact	Modify	Enhance
	Follow	Join	Organize	Excuse
	Give	Justify	Oversee	Forgive
	Help	Maintain	Plan	Influence
	Identify	Monitor	Qualify	Motivate
	Locate	Praise	Recommend	Negotiate
	Notify	Preserve	Revise	Object
	Obey	Propose	Simplify	Persevere
	Offer	Query	Specify	Persist
	Participate (in)	React	Submit	Praise
	Present	Respect	Synthesize	Profess
	Read	Seek	Test	Promote
	Relay	Share	Vary	Promulgate
	Reply	Study	Weigh	Question
	Report	Subscribe		Reject
	Respond	Suggest		Resolve
	Select	Support		Seek
	Try	Thank		Serve
		Uphold		Strive
				Solve
				Tolerate
				Volunteer (for)

⁴ Waller, K. (n.d.). *Writing instructional objectives*. Retrieved from: http://www.cetla.howard.edu/teaching_resources/Curriculum_Design/docs/Learning%20Objectives.pdf

Skill (Psychomotor) Domain

This list of action verbs can be used in the development of program-level outcomes or course-level learning objectives in the **skills (psychomotor) domain**. It is adapted from the University of Central Florida's "UCF Academic Program Assessment Handbook" (2005)⁵. Each column includes (1) category of the skills domain taxonomy (2) definition of the category, and (3) action verbs associated with that category.

Perception	Set	Guided Response	Mechanism	Complex Overt Response	Adaptation	Origination
Use of senses to obtain clues	Readiness to take action	Knowledge of the steps required to perform a task	Perform tasks in habitual manner	Skillful performance of motor acts	Skillful performance of motor acts and modification of movement in problematic or new situation	Creating new movement patterns for problematic or new situation
Choose Describe Detect Differentiate Distinguish Identify Isolate, Relate Select Separate	Begin Display Explain Move Proceed React Respond Show Start Volunteer	Assemble Build Calibrate Construct Dismantle Display Dissect Fasten Fix Grind Heat Manipulate Measure Mend Mix Organize Sketch Work	Assemble Build Calibrate Construct Dismantle Display Dissect Fasten Fix Grind Heat Manipulate Measure Mend Mix Organize Sketch Work	Assemble Build Calibrate Construct Dismantle Display Dissect Fasten Fix Grind Heat Manipulate Measure Mend Mix Organize Sketch Work	Adapt Alter Change Rearrange Reorganize Revise Vary	Arrange Combine Compose Construct Design Originate

⁵ University of Central Florida. (2005). Program assessment handbook: Guidelines for planning and implementing quality enhancing efforts of program and student learning outcomes. (February 2008 ed.). Retrieved from: https://oeas.ucf.edu/doc/acad_assess_handbook.pdf

Appendix C

Direct and Indirect Measures Examples⁶

Direct Evidence of Student Learning Outcomes

- Ratings of student skills by their field experience supervisors or employers
- Scores and pass rates on appropriate licensure or certification exams such as Praxis or National Council Licensure Examination (NCLEX) or other published tests such as Major Field Tests that assess key learning outcomes
- Capstone experiences such as research projects, presentations, theses, dissertations, oral defenses, exhibitions, and performances, scored using a rubric
- Other written work, performances, and presentations, scored using a rubric
- Portfolios of student work
- Scores on locally designed multiple choice or essay tests such as final examinations in key courses, qualifying examinations, and comprehensive examinations, accompanied by test blueprints describing what the test assesses
- Score gains between entry and exit on published or local tests or writing samples
- Observations of student behavior (such as presentations and group discussions), undertaken systematically and with notes recorded systematically
- Summaries and assessments of electronic discussion threads
- Think-alouds, which ask students to think aloud as they work on a problem or assignment
- Classroom response systems (clickers) that allow students in their classroom seats to answer questions posed by the teacher instantly and provide an immediate picture of student understanding
- Feedback from computer-simulated tasks such as information on patterns of action, decisions, and branches
- Student reflections on their values, attitudes, and beliefs

Indirect Evidence of Student Learning Outcomes

- Course grades and grade distributions
- Assignment grades, if not accompanied by a rubric or scoring criteria
- Retention and graduation rates
- For four-year programs, admissions rates into graduate programs and graduation rates from those programs
- Scores on tests required for further study (such as Graduate Record Examinations) that evaluate skills learned over a lifetime
- Quality and reputation of graduate programs into which alumni are accepted
- Placement rates of graduates into appropriate career positions and starting salaries
- Alumni perceptions of their career responsibilities and satisfaction
- Student ratings on their knowledge and skills and reflections on what they have learned over the course of the program
- Questions on end-of-course student evaluation forms that ask about the course rather than the instructor
- Student, alumni, and employer satisfaction with learning, collected through surveys, exit interviews, or focus groups
- Voluntary gifts from alumni and employers
- Student participation rates in faculty research, publications, and conference presentations
- Honors, awards, and scholarships earned by students and alumni

⁶ Suskie, L. (2009). *Assessing student learning: A common sense guide* (2nd ed.). CA: Jossey-Bass.

Direct Evidence of Student Developmental Outcomes

Some direct evidence of learning outcomes can be adapted for developmental outcomes. Additional sources of evidence:

- Observations of student behavior (such as presentations and group discussions), undertaken systematically and with notes recorded systematically
- Think-alouds, which ask students to think aloud as they participate in co-curricular initiatives
- Student reflections on their values, attitudes, and beliefs

Indirect Evidence of Student Development Outcomes

Some indirect evidence of learning outcomes can be adapted for developmental outcomes. Additional sources of evidence:

- Alumni perceptions of co-curricular programming and initiatives
- Student ratings on their developmental behaviors and reflections on what they have learned from participation in co-curricular programming and initiatives
- Student satisfaction with co-curricular programming and initiatives collected through surveys or focus groups
- Voluntary gifts from alumni and employers
- Student participation rates in co-curricular programming and initiatives
- Data collected from campus resources and services (e.g., reports on numbers of students accessing services)
- Annual campus life surveys
- Data on use of services and programming

References:

Lex, A.A. (2014, April). Encouraging and supporting campus wide involvement in improving instructional effectiveness. Middle States Commission on Higher Education, Philadelphia, PA.

Suskie, L. (2009). *Assessing student learning: A common sense guide* (2nd ed.). CA: Jossey-Bass.

University of Central Florida. (2005). Program assessment handbook: Guidelines for planning and implementing quality enhancing efforts of program and student learning outcomes. (February 2008 ed.). Retrieved from: https://oeas.ucf.edu/doc/acad_assess_handbook.pdf

Waller, K. (n.d.). *Writing instructional objectives*. Retrieved from: http://www.cetla.howard.edu/teaching_resources/Curriculum_Design/docs/Learning%20Objectives.pdf